We claim:

1. A method of detecting SCoV antibodies in a patient sample comprising:

a) contacting said patient sample with one or more SCoV antigenic peptides selected from the group consisting of SEQ ID NOS: 1, 5, 7, 9, and 12 or immunologically functional analogues thereof selected from the group consisting of SEQ ID NOS: 2, 3, 4, 6, 8, 10, 11, 13, 14, and 15 under conditions conducive to binding; and

b) measuring binding between said patient sample and said SCoV antigenic peptides or immunologically functional analogues thereof;

wherein detection of binding between said patient sample and said SCoV antigenic peptides or immunologically functional analogues thereof indicates the presence of SCoV antibodies in said patient sample.

2. The method of claim 1 wherein said one or more SCoV antigenic peptides or immunologically functional analogues thereof are attached to a solid phase prior to contact with said patient sample.

3. The method of claim 1 wherein said patient sample is selected from the group consisting of blood, serum, plasma, saliva, urine, mucus, fecal matter, and tissue extract.

4. A method of detecting SCoV antibodies in a patient sample comprising:

a) contacting said patient sample with one or more immunologically functional analogues of any of the SCoV antigenic peptides selected from the group consisting of SEQ ID NOS: 1, 5, 7, 9, and 12 under conditions conducive to binding, wherein said on or more immunologically functional comprises one or more of the following modifications when compared to said SCoV antigenic peptides:

i) a deletion of 10 amino acids or less at the N-terminus or C-terminus;

ii) an addition of 15 amino acids or less at the N-terminus or C-terminus;

iii) one or more conservative substitutions;

iv) an addition of a branched structure at the C-terminus;

v) covalent attachment to another moiety;

vi) an altered charge; and

vii) one or more conservative or non-conservative substitutions such that the sequence of said immunologically functional analogue is the sequence of a strain of SCoV other than the Tor2 isolate of SCoV; and

b) measuring binding between said patient sample and said immunologically functional analogues;

wherein detection of binding between said patient sample and said immunologically functional analogues indicates the presence of SCoV antibodies in said patient sample.

5. The method of claim 4 wherein said one or more SCoV antigenic peptides or immunologically functional analogues thereof are attached to a solid phase prior to contact with said patient sample.

6. The method of claim 4 wherein said patient sample is selected from the group consisting of blood, serum, plasma, saliva, urine, mucus, fecal matter, and tissue extract.

7. A peptide selected from the group consisting of SEQ ID NOS: 1-15.

8. A nucleic acid molecule that encodes a peptide of any of SEQ ID NOS:1-15 or a complement thereof.

9. A vector comprising a nucleic acid molecule of claim 8.

10. The vector of claim 9 that is an expression vector.

11. An immunologically functional analogue of an SCoV antigenic peptide of any one of SEQ ID NOS:1, 5, 7, 9, and 12 wherein said immunologically functional analogue comprises one or more of the following modifications when compared to the corresponding SCoV antigenic peptide:

a) a deletion of 10 amino acids or less at the N-terminus or C-terminus;

b) an addition of 15 amino acids or less at the N-terminus or C-terminus;

c) one or more conservative substitution;

d) an addition of a branched structure at the C-terminus;

e) covalent attachment to another moiety;

f) an altered charge; and

g) one or more conservative or non-conservative substitutions such that the sequence of said immunologically functional analogue is the sequence of a strain of SCoV other than the Tor2 isolate of SCoV.

12. A nucleic acid molecule that encodes a peptide of claim 11 or a complement thereof.

13. A vector comprising a nucleic acid molecule of claim 12.

14. The vector of claim 13 that is an expression vector.